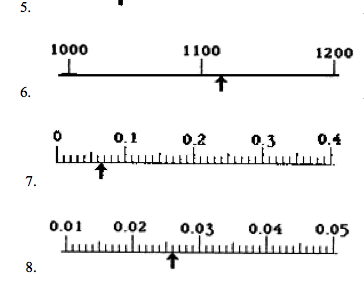
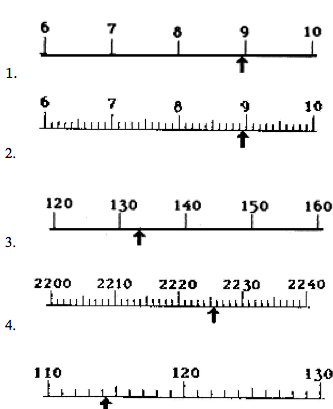
**Date Pd**

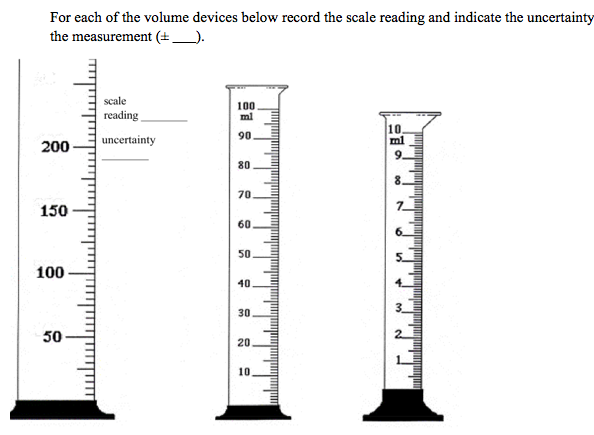
**Unit 1: Worksheet 2 - Reading Scales**

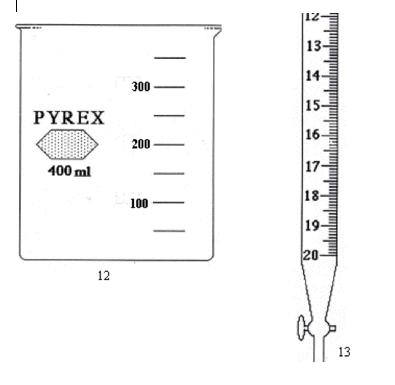
For each of the following, write the scale reading, then the number of significant figures in the reading.

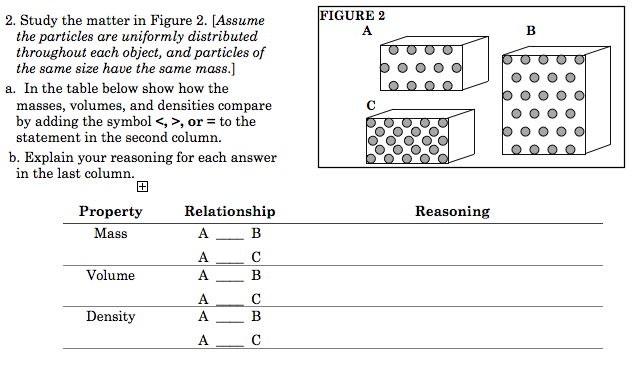
**Reading SF’s**

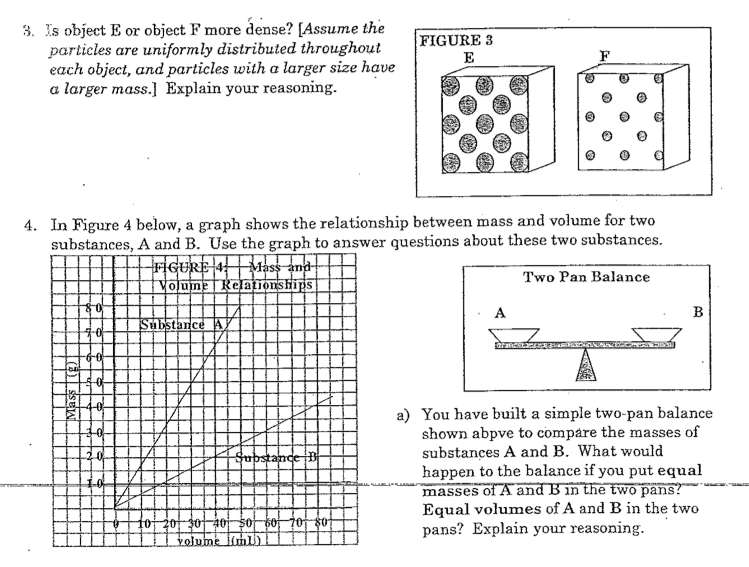


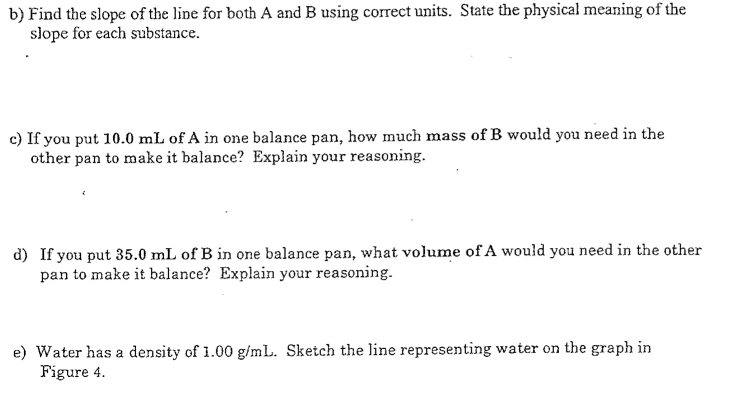
9.

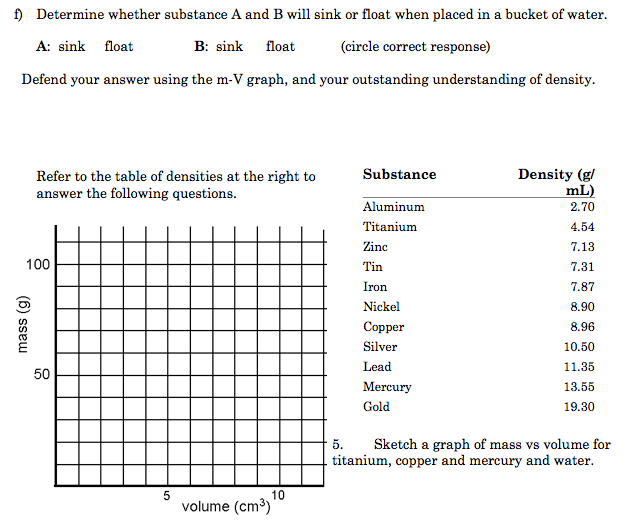


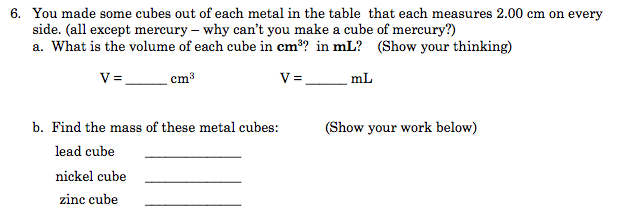


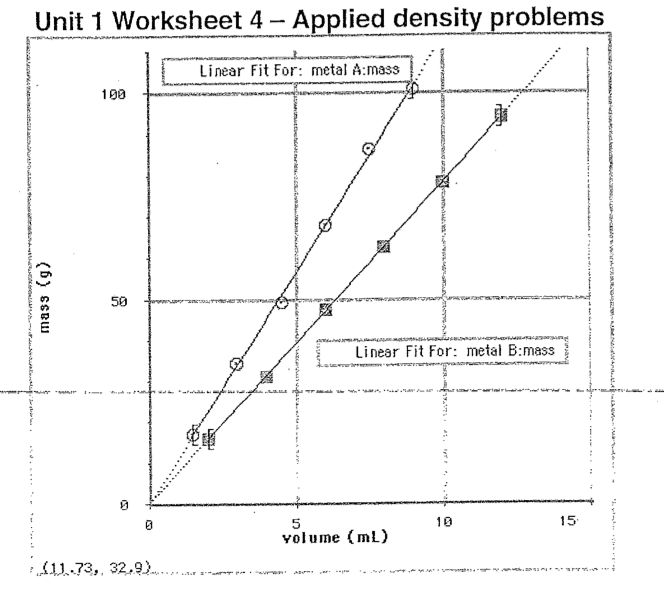












1. Using two points, determine the density of each metal. Show all your work and include appropriate units.

Which metal is more dense? How do you know? Explain

2. Using the graph, estimate

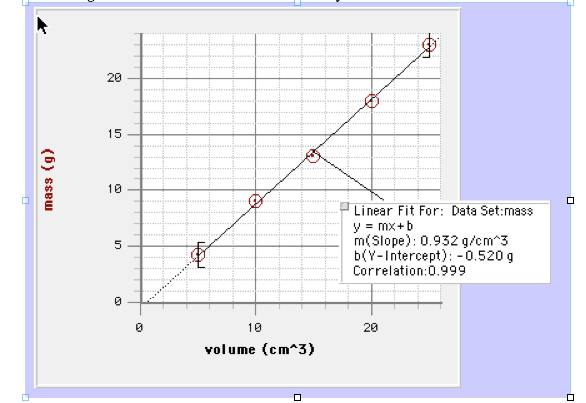
a. the mass of 8.0 cm3 of metal A.

b. the volume of 70 g of metal B.

c. mark on the graph how you found the answers above

3. Now, use the density of B that you found in #1, determine the answer to 2b mathematically. Show the set-up including how the units cancel.

7. The 9th Hr chemistry class produced the following graph when they were measuring the mass and volume of a set of objects in the lab.



a. Write the equation for the line.

b. What information is given by the slope of the graph?

c. Is the y-intercept negligible? Why or why not?

d. What would you predict would happen if you were to put one of the objects in water? Explain.

e. What would you expect to be the mass of a 45 cm3 piece of the same substance

Working with SI units(metric system)

Remember: King Henry died by drinking chocolate milk!!!

Kilo, hector, deka, base, deci, centi, milli

K, h, da, BASE, d, c, m

Try the following conversions:

1. 840 ml =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_L

2. 2.5 x 10-4 g =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_mg

3. 1.52 x 108 mm =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_km

4. 76 kg =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_mg

5. 3.786 m =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_km

6. .0083 hg =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_dg

7. 200 cm3 =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ml

8. 1 L =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ml

9. 23.5 cm =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_mm

10. 4.8 ft =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_cm (Hint: 1 in = 2.54 cm)

11. 150 lbs =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_g (Hint: 1 lb = 453.6 g)

12. 8.3 gal =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ml (Hint: 1 gal = 4 qts, 1 qt = .946 L)

Density problems:

21. Determine the volume that 35.2 grams of CCl4 will occupy if it has a density of 1.60 g/cm3.

22. The density of ethanol is 0.789 g/cm3 at 20˚C. What is the mass of 150 cm3 of the solution?

23. A block of lead measures 20.00mm x 3.00 cm x .45 dm. Calculate the mass of this block if the density of lead is 11.34 g/cm3?

24. What is the density of a hydrochloric acid solution which has a mass of 17.84 g and occupies 15.00 cm3?

25. What is the density of a solid piece of iron which has a mass of 11.78 grams and is 30 mm long, 1 cm wide, and .05 dm thick?

26. The density of a solution is 1.80 g/ cm3. What volume will 360 g of the solution occupy?

27. Which would be heavier? A ball of lead with a diameter of 2.00 cm or a cylinder of iron with a diameter of 3.00 cm and a height of 8.00 cm. The density of lead is 11.3 g/cm3 and the density of iron is 7.86 g/cm3.

28. If a fish tank holds 10 gallons of water and the density of water is 1.00 g/cm3, how many pounds of water are used to fill the tank? Hint: 1 pound = 453.6 grams, and there are 4 quarts in a gallon, and there are .946 liters in a quart)

Chemistry Homework Unit 1- #1 Significant Digits and Scientific Notation

1. How many significant digits do each of the following numbers have?

a. 1.00060 \_\_\_\_\_\_\_ b. .000234 \_\_\_\_\_\_ c. .10000 \_\_\_\_\_\_\_\_\_\_

d. 100000 \_\_\_\_\_\_\_ e. 100100 \_\_\_\_\_\_\_\_ f. 1.3400 x 104 \_\_\_\_\_\_\_\_\_

2. Round off the numbers to 3 significant digits.

a. 1.234234 \_\_\_\_\_\_\_ b. 48.965\_\_\_\_\_\_\_\_\_ c. .000023000 \_\_\_\_\_\_\_\_\_\_\_\_

3. Do the following calculations and round off the answer to the correct number of significant digits.

a. (5.78)(1.00876)(.0024) = \_\_\_\_\_\_\_ d.. (20)(9876)(.000025) ÷ (8790)(53.60) = \_\_\_\_\_

b. (9.760)(10500) ÷ (4.300) = \_\_\_\_\_\_ e. (2.909) – (1.34) = \_\_\_\_\_\_\_\_\_

c. 209.3 + 34 + .0005 + 28 = \_\_\_\_\_\_\_\_\_\_ f. 3.9820 -1.88 + 2930 = \_\_\_\_\_\_\_\_\_\_

4. Do the following problems and round the answer off to the correct number of significant digits.

a. An object has a mass of 234.86g and a volume of 26.2 ml. What is the density?

b. How much would a 2.00 liter bottle weigh if it were filled with mercury? (d = 13.62 g/ml for Hg)

c. What volume would 500 grams of aluminum have if the density is 2.712 g/ml?

5. Do the following calculations: (Your answer should be in scientific notation)

a. ( 3.65 x 104 )( 8.34 x 10-5) =

b. (9.353 x 105)( 4.56 x 106) / (1.34 x 108 ) =

c. (4.67 x 10-3)( 8.356 x 109) / (1.99 x 105 )( 2.66 x 10-12) =

d. (1.24 x 108 ) – ( 5.28 x 107) =

e. (8.77 x 105 ) + (1 x 107)

6. Take the answers in problem #5 and round them to the correct number of significant figures based on the starting numbers.